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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/337,494	06/22/1999	NARIHIRO MATOBA	1163-0242P	9072

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EXAMINER
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YE, LIN

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/337,494

Applicant(s)

MATOBA ET AL.

Examiner

Lin Ye

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-18 and 32-37 is/are allowed.
- 6) ☒ Claim(s) 19-25, 29-31 and 38-40 is/are rejected.
- 7) ☒ Claim(s) 26-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 19-25, 29-31 and 38-40 filed on 7/8/04 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 19-20, 24-25, 30-31 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori U.S. Patent 5,027,214 in view of Matsuura et al. U.S. Patent 6,459,816.

Referring to claim 19, the Fujimori disclose in Figure 1, an image processing unit, comprising: an A/D converter (12) for carrying out A/D conversion of image signals output from an image pickup apparatus (CCD 4) that picks up an image and converts it into electrical signals, and for outputting A/D converted image singles as image data (See Col. 5, lines 9-21; a fixed length coding circuit (15, see Col. 5, lines 22-24). However, the Fujimori reference does not explicitly show a detail of how a fixed length coding circuit for dividing

the image data into unit blocks, and for coding the pixels in each unit block, the code is non-orthogonal to the image data.

The Matsuura reference teaches in Figures 1-2, an image processing system comprising a fixed length coding circuit (e.g., using a **sub-band transform** method which is **non-orthogonal transformation**, see Col.3, lines 26-30 or a **block truncation encoding** which is also **non-orthogonal transformation**, see Col. 1, lines 41-47. Those transform methods are different from the **discrete cosine transform** which the code is orthogonal to the image data, see Col. 1, lines 56-60). The fixed length including a buffer unit (201) for dividing the image data into unit blocks (nxm pixel matrix block, i. e., 2x2 pixel block, see Col. 3, lines 38-40); a sub-band transform unit (203) for coding the pixels in each unit block (e.g., in Figure 2, average level of the pixel **a** and **b**, or average level of pixel **c** and **d**), wherein a length of the code output from the fixed length coding circuit is fixed (See Col. 4, lines 12-15). The Matsuura reference is evidence that one of ordinary skill in the art at the time to see more advantages for a fixed length coding circuit using a non-orthogonal transform method (sub-band, or block truncation) for coding image data so that quantized image data can be accurately represent the feature of the image and a low cost comparing with discrete cosine transform (DCT) components. For that reason, it would have been obvious to see the fixed length coding circuit for dividing the image data into unit blocks, and for coding the pixels in each unit block, the code is non-orthogonal to the image data disclosed by Fujimori.

Referring to claim 20, the Fujimori and Matsuura references disclose all subject matter as discussed in respected claim 19, and the Matsuura reference also teaches wherein the code

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output by the fixed length coding circuit induces quantization levels (by quantizing unit 1404, in Figure 15) of the pixels within the block (See Col. 4, lines 5-20).

Referring to claim 24, the Fujimori and Matsuura references disclose all subject matter as discussed with respect to same comment as with claim 19.

Referring to claim 25, the Fujimori and Matsuura references disclose all subject matter as discussed in respect to claim 24, and the Matsuura reference also teaches wherein the step of coding each block comprises determining quantization levels (by quantizing unit 1404a, in Figure 15) of the pixels within the block (See Col. 4, lines 5-20).

Referring to claims 38, the Fujimori and Matsuura references disclose all subject matter as discussed with respect to same comment as with claim 24, and the Matsuura reference teaches wherein the length of the code is fixed for each unit block (nxm pixel matrix block, i. e., 2x2 pixel block, see Col. 3, lines 38-40 and Col. 4, lines 12-15).

Referring to claim 39, the Fujimori and Matsuura references disclose all subject matter as discussed in respect to claim 38, and the Matsuura reference discloses a fixed length decoding circuit (for restoring original data) for reading from said coded image memory the fixed length coded data, and for carrying out fixed length decoding of the fixed length coded data for each unit block; and signal processing on the decoded image data (See Col. 10, lines 5-13).

For claim 40, the Fujimori and Matsuura references disclose all subject matter as discussed with respect to same comment as with claims 24 and 39.

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4. Claims 22-23 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori U.S. Patent 5,027,214 in view of Matsuura et al. U.S. Patent 6,459,816 and Takayama U.S. Patent 6,512,791.

Referring to claim 22, the Fujimori and Matsuura references disclose all subject matter as discussed in respected claims 19-20, and the Fujimori reference discloses an exposure controller (system controller 2) for controlling exposure of the image pickup apparatus such that the luminance level of the image data matches a predetermined level (e.g., by controlling signal charge accumulation time of CCD and aperture with respect to the incident light amount, see Col. 4, lines 47-50). However, the Fujimori reference does not explicitly show the exposure controller also can control an exposure of an image pickup apparatus based on the code.

The Takayama reference discloses in Figures 6A-D and 9-10, an image processing unit comprising: an A/D converter (16) for carrying out A/D conversion of image signals output from an image pickup apparatus (CCD 12) that picks up an image; an exposure controller (system controller 100, see Col. 4, lines 60-63) for calculating a luminance level of a whole set of pixel data in the unit blocks by integrating the average levels of the unit blocks (e.g., 8x8 pixel block), and for controlling exposure of the image pickup apparatus (e.g., gain control is performed) such that the luminance level of the image data matches a predetermined level (See Col. 1, lines 22-25 and lines 37-40). The Takayama reference is evidence that one of ordinary skill in the art at the time to see more advantages for the exposure control system has more flexible options for controlling the luminance level of image data to matches a predetermined level including gain controlling (e.g., based on the

code), exposure time controlling and aperture controlling so that incase the incident light amount is extremely bright or dark. For that reason, it would have been obvious to see the exposure controller is configured to control an exposure of an image pickup apparatus based on the code disclosed by Fujimori.

Referring to claim 23, the Fujimori, Matsuura and Takayama references disclose all subject matter as discussed in respected claim 22, and the Takayama reference teaches the system controller is configured to calculate a luminance level of a whole set of pixel data in the unit blocks by integrating the average levels of the unit blocks (e.g., 8x8 pixel block), and for controlling exposure of the image pickup apparatus (e.g., gain control is performed) based on the calculated luminance level (See Col. 1, lines 22-25 and lines 37-40).

Referring to claim 30, the Fujimori, Matsuura and Takayama references disclose all subject matter as discussed in respected to same comment as with claim 23.

Referring to claim 31, the Fujimori, Matsuura and Takayama references disclose all subject matter as discussed in respected claim 30, and the Takayama reference teaches the system controller (100) calculating a gain correction coefficient needed to correct the luminance level of the digital image data to a predetermined luminance level; and adjusting the luminance level of the digital image data based on the gain correction coefficient (See Figure 19, Col. 1, lines 50-60, and Col. 6, lines 36-44).

5. Claims 21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori U.S. Patent 5,027,214 in view of Matsuura et al. U.S. Patent 6,459,816 and Iwasaki et al. U.S. Patent 5,414,487.

Referring to claim 21, the Fujimori and Matsuura references disclose all subject matter as discussed in respected claim 20, except the references do not explicitly show a pixel rearrangement circuit for sorting the image data that each color component is arranged in a unit block, and the image unit has signal level correction means respective color components.

The Iwasaki reference discloses in Figures 17 and 19A-B, an AE camera including a pixel rearrangement circuit (grouping device 49) for grouping the image data in a checkerboard pattern which each color component is arranged in a same group (unit block), each of which consists of a predetermined number of pixels (3x3 pixels) (See Col. 12, lines 35-39). The Iwasaki reference is evidence that one of ordinary skill in the art at the time to see more advantages for an image-processing unit including a pixel rearrangement circuit to group each color component in a unit block so that a shift in light metering portion due to a color difference can be further reduced. For that reason, it would have been obvious to see the image-processing unit comprising a pixel rearrangement circuit for sorting the image data that each color component is arranged in a unit block and the signal level correction means respective color components disclosed by Fujimori.

For claim 29, the Fujimori, Matsuura and Iwasaki references disclose all subject matter as discussed with respected to same comment as with claims 21 and 24.

#### *Allowable Subject Matter*

6. Claims 1-18 and 32-37 allowed.

The prior art does not teach or fairly suggest a fixed length coding circuit for dividing the image data into unit blocks, each comprising a predetermined number of pixels, and for



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coding the pixels in each unit block after obtaining an average level of the pixels in the unit block, wherein a length of the code output from the fixed length coding circuit is fixed and the code is non-orthogonal to the image data.

7. Claims 26-28 are objected to as being dependent upon a rejected base claim 24, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Conclusion*

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lin Ye whose telephone number is (703) 305-3250. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Lin Ye  
November 15, 2004